PATENT

S/N 09/781,149

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	LYONS ET AL.	Examiner:	YEUNG, JAMES
Serial No.:	09/781,149	Group Art Unit:	3743
Filed:	FEBRUARY 8, 2001	Docket No.:	12929.1062US01
Title:	MONOLITHIC PANEL FOR A GAS BURNER		

DECLARATION OF DAVID C. LYONS

I, David C. Lyons, declare and say as follows:

1. I am an engineer for Hearth Technologies, Inc., a subsidiary of HON Industries, Inc., and have worked at Hearth Technologies or companies related to Hearth Technologies, including Heat-N-Glo Fireplace Products, Inc., for the past eight (8) years and eleven (11) months.

2. I am a named inventor for the above referenced United States patent application (Serial No. 09/781,149).

3. I have worked with refractory ceramic fiber molding techniques for at least the last six (6) years.

4. Other than the work conducted with respect to the inventions disclosed in the above referenced United States patent application (Serial No. 09/781,149), I am unaware of any other prior work at Hearth Technologies, Inc., or otherwise, or any other prior disclosures related to compression molding of materials for use in gas fireplace systems.

I declare that all statements made are of my own knowledge and are true, and that all statements made on information and belief are believed to be true and I have been warned that willful false statements and the like are punishable by fine or imprisonment, or both (18 U.S.C. §1001), and may jeopardize the validity of the application resulting therefrom.

Date: 3/4/02

David C. Lyons

SN 09/781,149 PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	LYONS ET AL.	Examiner:	YEUNG, JAMES C.
Serial No.:	09/781,149	Group Art Unit:	3749
Filed:	FEBRUARY 8, 2001	Docket No.:	12929.1062US01
Confirm. No.:	7449	Customer No.:	23552
Title:	MONOLITHIC PANEL FOR A GAS BURNER		

SUPPLEMENTAL DECLARATION OF DAVID C. LYONS

I, David C. Lyons, further declare and say as follows.

1. This is in supplement to my declaration executed on March 4, 2002 and filed with the Patent Office on April 8, 2002 in conjunction with the above-referenced application, which is hereby incorporated by reference in its entirety.

2. I am an engineer for Hearth & Home Technologies Inc. (formerly Hearth Technologies, Inc.), a subsidiary of HNI Corporation, and have worked at Hearth & Home Technologies Inc. or companies related to Hearth & Home Technologies Inc., including Heat-N-Glo Fireplace Products, Inc., for approximately the past eleven (11) years.

3. I am a named inventor for the above-referenced application (Serial No. 09/781,149).

4. I have worked with refractory ceramic fiber molding techniques for at least the last ten (10) years.

5. In my previous declaration I stated the following: "Other than the work conducted with respect to the inventions disclosed in the above referenced United States patent application (Serial No. 09/781,149), I am unaware of any other prior work at Hearth Technologies, Inc., or otherwise, or any other prior disclosures related to compression molding of materials for use in gas fireplace systems." I wish to clarify this statement by stating the following: Other than the work conducted with respect to the inventions disclosed in the above referenced United States patent application (Serial No. 09/781,149), I am unaware of any other prior work at Hearth & Home Technologies Inc., or otherwise, or any other prior disclosures related to compression molding of materials including refractory ceramic fibers for use in gas fireplace systems.

6. Compression molding differs from and has distinct advantages over other molding techniques, such as vacuum molding.

7. For example, vacuum molding involves the use of a slurry of material. The slurry is formed of water and a solid material and is of a consistency so that the slurry can be transported through a conduit system. Typically, the slurry is drawn through a porous screen. The screen prohibits almost all of the solid material of the slurry from passing through, but allows fluids to pass. The solid material therefore amasses on the screen to form the vacuum molded material, which typically requires a thickness of one-half an inch.

8. In contrast, compression molding involves the use of compressive pressure as the basis for forming an object in a desired shape. For example, in one compression molding process, a compression molding composition, typically including fiber and a binder, is placed in a mold and then compressed therein, and heat can also be applied. In another compression molding process, a compression molding composition is forced into a heated mold through one or more injection ports using appropriate injection techniques when the mold is in the closed position. The moldable composition, through pressure from the injection process, and compression from the closed mold dies, fills the mold cavity, and is formed into the desired shape. A compression-molded object can have a thickness of down to about one-quarter of an inch.

9. There is no vacuum, slurry, or screen used in either compression molding process described above.

10. Beyond the physical differences in the vacuum and compression molding processes, there are distinct advantages to an article that is formed by compression molding of a compression molding composition. For example, a compression molded article made by a compression molding process can exhibit one or more of the following advantages over a vacuum molded article made by a vacuum molding process:

a. greater flexibility in creating more detailed and complex designs during the compression molding process, such as the ability to mold in details that can not be created by a vacuum molding process;

b. greater strength in the resulting compression molded article - up to a ten fold increase in strength;

c. retention of article details during the molding process, including that the compression molded article can be stripped from the mold in a more cured state so that the article retains its shape and features, while vacuum molded articles are stripped from the vacuum molding screen while still in a "green" or malleable state and can therefore lose desired features;

d. greater manipulability of the resulting compression molded article, such as the ability to cut, drill, and otherwise shape the compression molded article as desired - for example, a compression molded article can be cut to a desired size and holes can be drilled to attach fasteners to the article, while a vacuum molded article cannot be easily cut or have holes drilled therein because the material typically flakes or crumbles when cut or otherwise manipulated; and

e. compression molded articles form a non-porous material, which is different from porous vacuum formed materials.

11. I declare that all statements made are of my own knowledge and are true, and that all statements made on information and belief are believed to be true and I have been warned that willful false statements and the like are punishable by fine or imprisonment, or both (18 U.S.C. §1001), and may jeopardize the validity of the application resulting therefrom.

Date: 5/20/04

David C. Lyons